

## BRIEF NOTE

# Twenty-eight Species of Moths New to Ohio from Huffman Prairie, Greene County (Lepidoptera)<sup>1</sup>

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**ABSTRACT.** Huffman Prairie, a 109 acre Ohio registered Natural Landmark, was inventoried for Lepidoptera under agreement with The Nature Conservancy and Wright-Patterson Air Force Base from June 1992 through July 1994. As a result of this inventory, *Pseudopostega cretea* (Meyrick) (Opostegidae), *Tinea carnariella* Clemens (Tineidae), *Agonopterix pteleae* Barnes & Busck (Oecophoridae), *Cosmopterix dapifera* Hodges, *Cosmopterix montisella* Chambers (Cosmopterigidae), *Calosima melanostriatella* (Dietz) (Blastobasidae), *Coleophora texanella* Chambers (Coleophoridae), *Isophrictis rudbeckiella* Bottimer, *Bryotropha branella* (Busck), *Gnorimoschema busckiella* Kearfott, *Scrobipalpula benshawiella* (Busck), *Scrobipalpa atriplicella* (F.v. Röslerstamm), *Fruventia nundinella* (Zeller), *Syncopacma palpilineella* (Chambers), *Helcystogramma chambersella* (Murtfeldt) (Gelechiidae), *Acrolepiopsis leucoscia* (Meyrick) (Acrolepiidae), *Eucosma beatbiana* Kearfott, *Epiblemma tandana* (Kearfott), *Dichrorampha sedatana* (Busck), *Aethes obliquana* (Kearfott), *Carolella sartana* (Hübner), *Phalonia aurorana* Kearfott, *Thyraylia nana* (Haworth), *Trachysmia villana* (Busck), *Trachysmia cartwrightana* (Kearfott) (Tortricidae), *Hellula rogatalis* (Hulst) (Crambidae), *Phycitodes albatella reliquella* (Dyar), and *Peoria roseotinctella* (Ragonot) (Pyralidae) were recorded from Ohio for the first time.

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## INTRODUCTION

Huffman Prairie is a tract of 109 acres (Nolin and Runkle 1985, Nolin and Mutter 1988), of which 78 acres are an Ohio registered Natural Landmark (Anonymous 1986). Formerly drained, grazed, mowed, and hayed, it remains a remnant prairie that harbors several species of plants and animals that are prairie specialists. Huffman Prairie is being studied by the Ohio Chapter of The Nature Conservancy under a joint agreement with the Department of Defense and the Wright-Patterson Air Force Base Office of Environmental Management. The Nature Conservancy and the Air Force Base commissioned an inventory of the Lepidoptera in Huffman Prairie from June 1992 through July 1994.

Plant communities are important indicators of a prairie. The Nature Conservancy decided to study Lepidoptera at Huffman Prairie because, as herbivores, they are an important part of the prairie ecosystem. Lepidoptera are also an important part of the food web for birds, small mammals, and other insects which may also be prairie specialists. Management plans which accommodate Lepidoptera receive support because lepidopterans, particularly butterflies, are popular with the general public, and lepidopterans can be dramatically affected by traditional prairie management techniques, such as fire (Dana 1986, Dana 1991, Miller 1979, Panzer 1988, Van Amburg et al. 1981).

## MATERIALS AND METHODS

The data were collected by systematically collecting moths with black-lighting apparatus in Huffman Prairie. During the inventory, black-light traps were used 25 nights in each of three locations in the prairie. The moths were dispatched with cyanide in the light traps. Moths were also attracted to a bait mixture of decaying and fermenting fruit for sampling. Baiting was conducted on seven different nights. Moths that were attracted to baits were dispatched in cyanide jars, and at least one voucher of each species was retained. For most of the smaller moths, all specimens were retained for further study. To ensure positive identification, the genitalia of all species reported here were examined.

Voucher specimens were deposited in the Dayton Museum of Natural History and the collection of The Ohio Lepidopterists at the Ohio State University Museum of Biological Diversity. Additional vouchers were deposited in the U.S. National Museum of Natural History, Washington, DC, the Canadian National Collection, Ottawa, Ontario, and the Cleveland Museum of Natural History, Cleveland, OH.

## RESULTS

Twenty-eight species of moths were recorded in Ohio for the first time. The following data apply to all specimens: U.S.A., Ohio, Greene County, Bath Township, Wright-Patterson Air Force Base, Huffman Prairie, N 39°48.4' x W 84°3.5'. The number of specimens collected on each date is noted in parentheses following the date. The distribution of each species, prior to its discovery in Ohio, is reported from specimen data in the U.S.

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National Museum of Natural History (U.S.N.M.), Florida State Collection of Arthropods (F.S.C.A.), Museum of Comparative Zoology at Harvard University (M.C.Z.), from the literature as cited, or other observations as indicated.

#### Opostegidae

*Pseudopostega cretea* (Meyrick), 8 July 1994 (1). Distribution: Ontario, MI, NY, and CT, south to NC (U.S.N.M.).

#### Tineidae

*Tinea carnariella* Clemens, 8 July 1994 (1). Distribution: NJ and PA, south to FL, west to MT and OK (U.S.N.M.).

#### Oecophoridae

*Agonopterix pteleae* Barnes & Busck, 1 July 1994 (1), 8 July 1994 (2). Distribution: IL (Hodges 1974).

#### Blastobasidae

*Calosima melanostriatella* (Dietz), 10 June 1994 (1). Distribution: PA and CT (U.S.N.M.).

#### Coleophoridae

*Coleophora texanella* Chambers, 17 July 1993 (1). Distribution: MA to FL, west to ND and CA (M.C.Z., F.S.C.A., U.S.N.M.).

#### Cosmopterigidae

*Cosmopterix montisella* Chambers, 10 June 1994 (1). Distribution: NY to OR, south to AZ and southern CA (Hodges 1978).

*Cosmopterix dapifera* Hodges, 17 July 1993 (1), 8 July 1994 (5). Distribution: TN, AR, FL, and AZ (Hodges 1978).

#### Gelechiidae

*Isophrictis rudbeckiella* Bottimer, 24 July 1992 (3), 17 July 1993 (10), 16 Aug. 1993 (1), 1 July 1994 (30), 8 July 1994 (18). Distribution: TX ("from flower heads of *Helianthus mollis*") and IL (U.S.N.M.).

*Bryotropha branella* (Busck), 24 July 1992 (1), 1 July 1994 (1). Distribution: NJ, MD, VA, and NC (U.S.N.M.).

*Gnorimoschema busckiella* Kearfott, 15 Oct. 1993, 14 Oct. 1994 (1). Distribution: MI ("on purple aster") and NJ (U.S.N.M.).

*Scrobipalpula henshawiiella* (Busck), 17 July 1993 (9), 6 Aug. 1993 (3), 17 Sept. 1993 (2), 1 July 1994 (21), 8 July 1994 (5), 2 Sept. 1994 (2), 17 Sept. 1994 (1). Distribution: Nova Scotia, NH, PA, and AZ (U.S.N.M.).

*Scrobipalpa atriplicella* (F.v. Röslerstamm), 17 July 1993, 6 May 1994 (2). Distribution: Nova Scotia south to DC, west to Ontario, IL, CA, WA, and AK (U.S.N.M.).

*Fruventia nundinella* (Zeller), 17 July 1993 (1). Distribution: PA and VA, south to GA, west to IA and LA (reared "from *Solanum carolinense*") (U.S.N.M.).

*Syncopacma palpilineella* (Chambers), 17 July 1993 (7), 17 Sept. 1993 (4), 10 June 1994 (3), 1 July 1994 (6), 8 July 1994 (11). Distribution: NY and NJ south to SC, west to NE and AZ (U.S.N.M.).

*Helcystogramma chambersella* (Murtfeldt), 17 Sept. 1993 (1), 8 July 1994 (2). Distribution: PA south to FL, west to AZ and CA (Hodges 1986).

#### Acrolepiidae

*Acrolepiopsis leucoscia* (Meyrick), 6 May 1994 (1). Distribution: TX (U.S.N.M.) and Midland Co., MI (D. Profant Collection).

#### Tortricidae

*Eucosma beathiana* Kearfott, 24 July 1992 (>25), 7 Aug. 1992 (>25), 6 Sept. 1992 (>25), 17 July 1993 (>25), 31 July 1993 (>25), 6 Aug. 1993 (>25), 13 Aug. 1993 (12), 1 July 1994 (17), 8 July 1994 (15). Distribution: Manitoba (Heinrich 1923), MI, and MN (Miller 1987).

*Epiblemma tandana* (Kearfott), 8 July 1994 (1). Distribution: NJ and PA (Heinrich 1923), MI and MN (Miller 1987), and KY (L. D. Gibson collection).

*Dichrorampha sedatana* (Busck), 13 May 1994 (2). Distribution: CO, CA, British Columbia, and AK (Heinrich 1926). MI, WI, and MN (Miller 1987).

*Aethes obliquana* (Kearfott), 8 Oct. 1993 (1). Distribution: Type locality: NC.

*Carolella sartana* (Hubner), 17 Sept. 1993 (1). Distribution: NC, south to FL, west to MS and TX (U.S.N.M.).

*Phalonia aurorana* Kearfott, 6 Sept. 1992 (1), 17 Sept. 1993 (1). Distribution: NH, MA, CT, and NJ (U.S.N.M.).

*Thyraylia nana* (Haworth), 6 Aug. 1993 (1). Distribution: Nova Scotia, south to NC, west to SD, UT, Alberta, British Columbia, and OR (U.S.N.M.).

*Trachysmia cartwrightana* (Kearfott), 17 July 1993 (12), 31 July 1993 (1), 8 Aug. 1993 (2). Distribution: Manitoba and Trenton, Ontario (U.S.N.M.).

*Trachysmia villana* (Busck), 17 July 1993 (2), 1 July 1994 (5), 8 July 1994 (4), 6 Aug. 1993 (2), 13 Aug. 1994 (4). Distribution: Alberta, ND, and CO (U.S.N.M.).

#### Crambidae

*Hellula rogatalis* (Hulst), 13 Aug. 1993 (2). Distribution: Nova Scotia to FL, KY, and AR, west to TX and southern CA (Munroe 1972).

#### Pyralidae

*Phycitodes albatella reliquella* (Dyar), 17 Aug. 1993 (2), 15 Oct. 1993 (1), 8 July 1994 (1). Distribution: NH, west to IL, south to south FL (Heinrich 1956).

*Peoria roseotinctella* (Ragonot), 17 July 1993 (1). Distribution: KS, eastern TX to FL, and north to NJ (Shaffer 1968).

## DISCUSSION

The occurrence, in Huffman Prairie, of some of the moth species, new to Ohio, may be a relict of the prairie's affinities with western U.S. prairie ecosystems. *Eucosma beathiana*, *Isophrictis rudbeckiella*, *Agonopterix pteleae*, *Trachysmia cartwrightana*, and *Trachysmia villana* are found in association with prairies, or they are distributed in states west of Ohio. *Isophrictis rudbeckiella*, *Eucosma beathiana*, and *Trachysmia cartwrightana* are known from no other location in Ohio, yet they are very common in Huffman Prairie.

Not all of the species reported as state records are prairie specialists. Several species, such as *Cosmopterix montisella*, *Helcystogramma chambersella*, and

*Phycitodes albatella reliquella* are widely distributed in the eastern U.S., but their small size (wing span less than 19 mm) may explain why they were not previously reported from Ohio. Ohio appears to be at the northern edge of the distribution for others, such as *Cosmopterix dapifera*, *Carolella sartana*, and *Hellula rogatalis* (cabbage webworm).

Some groups of moths are poorly known, and proper identification is difficult. The Blastobasidae and Cochylini (Tortricidae) cannot be identified with certainty without comparing genitalia preparations to type specimens.

The inventory of Lepidoptera continues at Huffman Prairie with an emphasis on moths that fly during the daytime hours.

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